

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113904 A1

(51) International Patent Classification⁷: G01N 27/62

(21) International Application Number:
PCT/FI2004/050099

(22) International Filing Date: 22 June 2004 (22.06.2004)

(25) Filing Language: Finnish

(26) Publication Language: English

(30) Priority Data:
20030938 24 June 2003 (24.06.2003) FI

(71) Applicant (for all designated States except US): DEKATI
OY [FI/FI]; Osuusmellynkatu 13, FI-33700 Tampere (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): TIKKANEN, Juha
[FI/FI]; Rautapellonkatu 37, FI-33700 Tampere (FI).
MOISIO, Mikko [FI/FI]; Vialantie 25 B 8, FI-33710
Tampere (FI). JANKA, Kauko [FI/FI]; Maisterinkatu
12, FI-33720 Tampere (FI). PIETARINEN, Kimmo
[FI/FI]; Elna Hellmaninkatu 5, FI-33720 Tampere (FI).

KESKINEN, Jorma [FI/FI]; Köynnöskatu 1 A, FI-33270
Tampere (FI). ROSTEDT, Antti [FI/FI]; Itsenäisyy-
denkatu 7-9 A8, FI-33100 Tampere (FI).

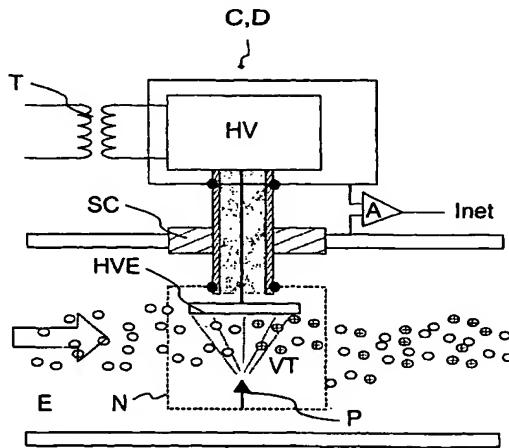
(74) Agent: TAMPEREEN PATENTTITOIMISTO OY;
Hermiinkatu 12 B, FI-33720 Tampere (FI).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: A METHOD AND A SENSOR DEVICE FOR MEASURING PARTICLE EMISSIONS FROM THE EXHAUST GASES
OF A COMBUSTION ENGINE



(57) Abstract: The invention relates to a method and a sensor device for determining particle emissions from exhaust gases of a combustion engine substantially during the use in an exhaust pipe system or a corresponding exhaust gas duct (E), in which method emitted particles contained in the exhaust gases are charged and the particle emissions are determined by measuring the electric charge carried by the emitted particles in said exhaust gas duct (E). According to the invention, the emitted particles are charged by varying the way of charging or the charging power with respect to time in such a manner that as a result of said charging, emitted particles brought into at least two different electrical charge states are present, wherein the charge of the emitted particles is further determined as a difference value/values measured from the emitted particles brought into said at least two different electrical charge states. The invention makes it possible to measure particle emissions more accurately than in prior art.

WO 2004/113904 A1



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.